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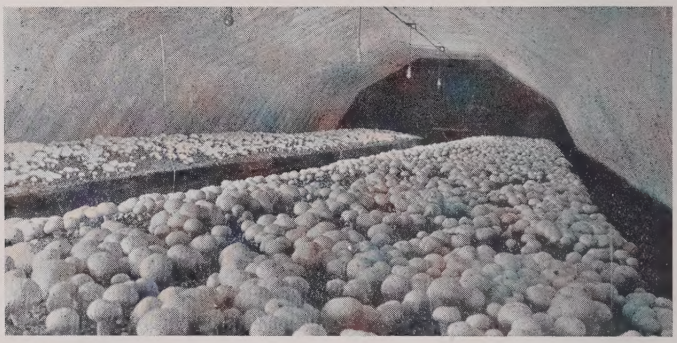

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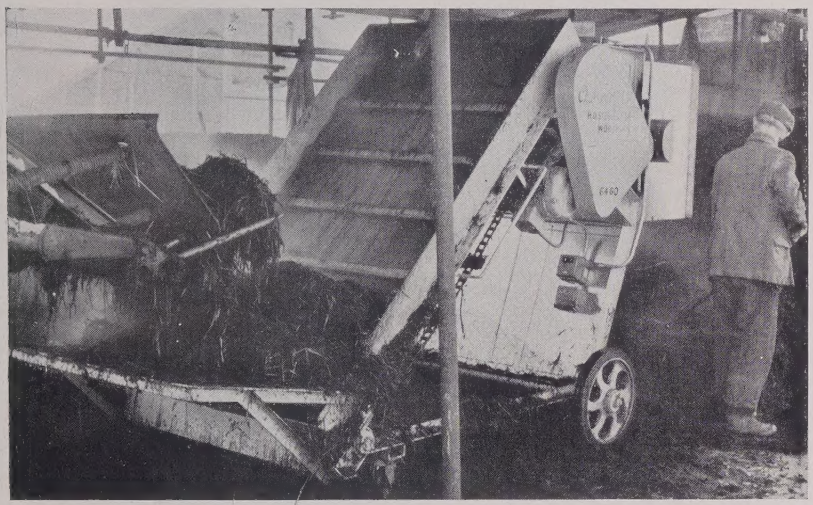

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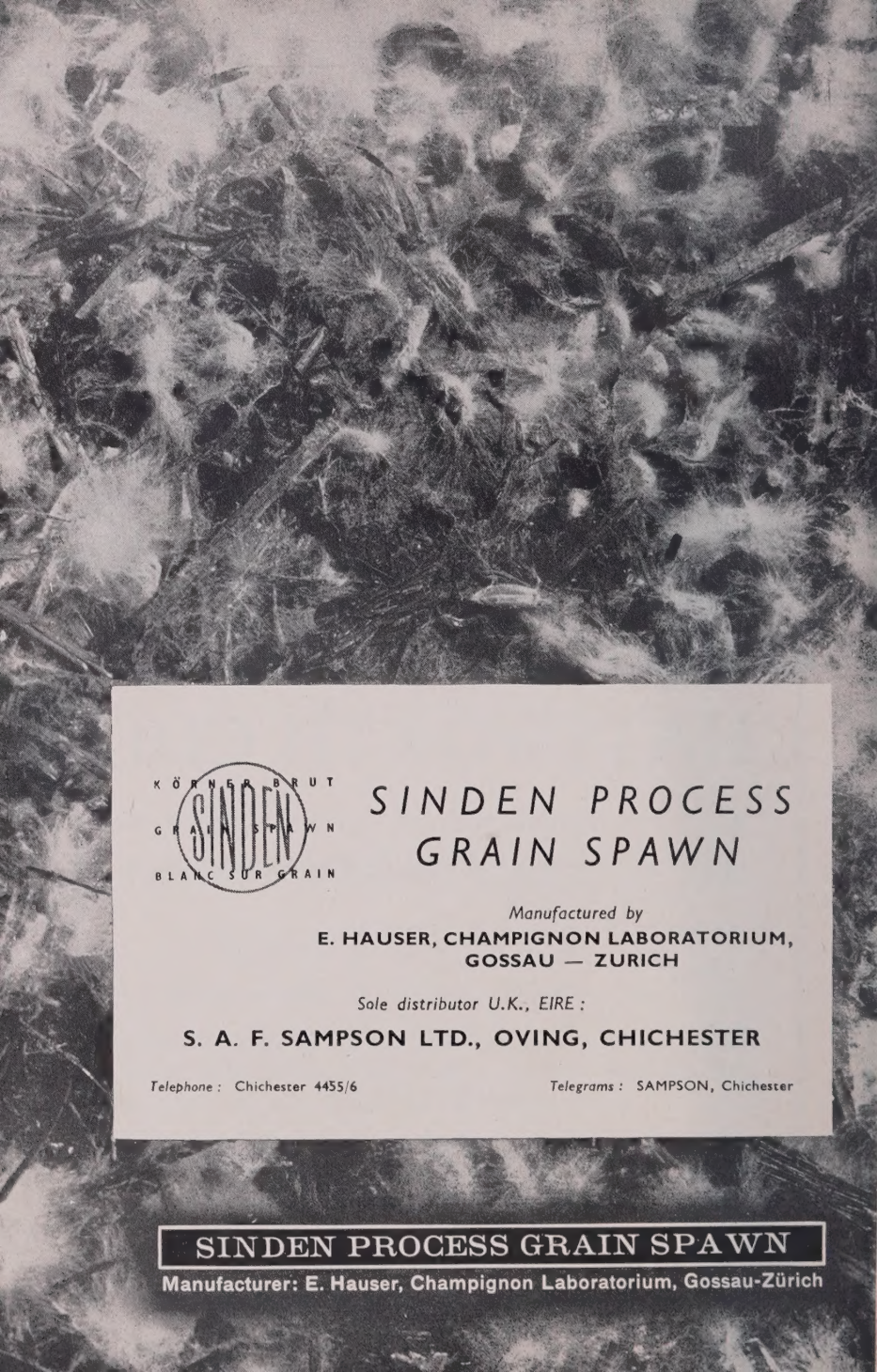

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EDITORIAL

AREA MEETINGS

Without much question, one of the most disappointing features of MGA activities over the past year or two has been the almost complete inaction of area committees, although in all fairness, Area C stands alone as the exception.

Time was when such meetings, never plentiful, were certainly reasonably frequent and a great success they were too.

It is essential in the running of any organisation, particularly when members are as widespread as is the case with mushroom growers, that those who endeavour to control and to guide the industry, should be kept in close and regular contact with the rank and file, because it is on the support of the members as a whole that this organisation, and any organisation for that matter, survives. With plenty of support it thrives but a lack of interest amongst members can have only one end.

There are many factors, some outside MGA control, which now threaten the industry and which should be discussed up and down the country. The Common Market is one, the lack of practical research is another and the need for efficient marketing is a third—and there are many more. These are matters which concern each and every member, be he large or be he small. The success of solving these and other problems could mean the difference between reasonable prosperity and unreasonable bankruptcy.

The revival then, of area meetings and, if possible, farm walks, and the stimulation which would be aroused both in the areas immediately concerned and amongst those "at the top", could do a power of good all round so it is a plain case of the sooner the better.

If you are willing to have a farm walk then please write to the MGA Secretary—he will do the rest. To the host grower such occasions are often a nuisance but it is an important service such a grower performs in the interest of the rest of the industry and such actions, rare perhaps in some circles, need not be so in the mushroom growing industry here.

WRA

WHY NOT FLOOR HEATING?

Based on an Article by P. J. Vedder in the journal of the Dutch Mushroom Industry, Jan—Feb/61.

The Dutch Research Institute at Horst is nowadays recommending the heating of mushroom houses by hot-water pipes rather than by hot air through ducts and channels in the floor, which for some years has been standard practice in Holland.

The principal reason behind this change of thought is that it seems desirable to separate the heating from the air intake and circulation. Where heat is dependent on the amount of air introduced the system is too inflexible. It often happens, specially in winter, that the grower wants more heat without having to increase his air change and/or circulation; and it has been found that, in raising the house temperature, the beds dry out rapidly and the caps of the mushrooms suffer because of the increased air movement.

Structural heat losses, and consequently the need for more heat in cold weather, can be minimised by additional insulation, but the Dutch houses are already expensive enough, and the air channels must also be better insulated, which is not easily done. There are hygiene objections, too, to channels in the floor, and these factors have encouraged a fresh approach to this problem.

It appears now that the more orthodox heating by pipes along the walls has unexpected advantages, particularly with small extractor fans to control ventilation, and is not only cheaper to instal but is simple to repair and maintain. And of course the troublesome floor channels are dispensed with.

Pipes along the walls can be a nuisance, for they occupy space and to that extent restrict the growing area, and thought is now being given to floor heating.

With floor heating a number of $1\frac{1}{4}$ inch diameter pipes are set in the concrete floor and about one inch of concrete is laid over them. It is essential to allow for expansion, and a special bituminous compound is used. In a house measuring $16' \times 42'$, about $975'$ of pipe is laid in series at eight-inch intervals, 24 pipes to a house.

An immediate advantage has been found to be the very even temperature distribution through the house. During pasteurization (the writer is thinking of Dutch houses where the whole process takes place in shelves) the bottom beds achieve an adequate temperature. The temperature throughout the house is easily regulated. Humidity is rapidly increased and simply maintained by spraying water on the warm floor.

The disadvantages are: Installation costs are slightly higher than pipes along the walls, and repairs to pipes in the floor are practically impossible, though means of overcoming this will be found from the experiences of a number of growers who have floor-heating installations.

Floor heating is a very old system first used, it is thought, by the Romans, but little is known of it in mushroom houses, and trials are about to start at Horst.

A WELL PLANNED TRAY FARM

Mr. D. W. P. Dales of Littlehampton

A view taken from the outside of the farm building, showing the double-bayed Nissen-type growing houses.

The majority of growers with farms which have been established for some years say to themselves no doubt, every now and again, just how they would plan a new farm from scratch, removing that boiler house, which seemed so well sited a year or two ago, away from its present silly position, how they would have the peak heat room adjoining the composting shed and how that covered roadway between houses would make all the difference in the world.

Mr. D. W. P. Dales of Toddington House, Littlehampton, tray grower with a basic area of 30,000 sq. ft. planned and constructed with his own labour, has just such a well laid out farm, wherein, covered all the time, every mushroom growing operation can be carried out except emptying. He empties his growing houses via the outside doors of the growing sheds for reasons of hygiene.

I drove into Mr. Dales' mushroom farm—he has extensive and expanding interests in carnation growing as well—and found myself on a concrete road flanked on the one side by mushroom growing buildings with large doors, and on the other by open land. I tried the other way and found exactly the same thing for the entire mushroom

growing plant is contained in an area measuring 150 ft. in width and 260 ft. in length, the whole, including a splendid composting and filling shed measuring 55 ft. by about 100 ft., being roofed over.

The composting shed contains no supporting pillars whatsoever, thus enabling the work, which includes the use of a tractor and fork lift, to be carried on unhampered. The 55 ft. roof span trusses of protomised wood—these trusses were assembled on the farm with farm labour—are considered by Mr. Dales to be likely to require less maintenance than steel trusses, because of the heat plus moisture question. It is significant that the composting shed is sited at the extreme end of the existing buildings thus allowing for the easy expansion of additional growing and peak heat rooms on the other side, where land is available.

Short composting (8 days) is the order of the day on this farm, and casing is the usual mixture of peat and chalk, the mix being carried out in an old soil screen with revolving drum.

Steam is supplied by an oil-fired American type package boiler for peak heating and hot water boiler for heating the growing houses.

Basis of the compost is stable manure with the usual gypsum and poultry manure added. Here again the time spent in the peak-heat room is determined by each individual compost and a Hauser-Sinden machine is used for the casing operation and spawning.

Because of the splendid lay-out of this farm and the dead-level floors the moving of the trays is carried out by man-powered stillage trucks and presents no problems whatsoever. In the same manner large wooden chests containing the made-up casing material are also moved from the mixing shed to the corridor for casing.

The trays measure 3′ × 2′ and are purpose-built of Portuguese pine. The compost is 5″ deep and the casing layer $1\frac{1}{2}$″.

A feature of the 10 Nissen-type growing houses, each containing 3,000 sq. ft. of beds, are the double-bayed roofs, with two layers of fibreglass and two layers of roofing felt providing the insulation. Growing temperature is maintained at about 60° F. and $1\frac{1}{4}$″ steam pipes provide the heat. Fresh air to all the growing houses is introduced via a main underground air duct, the air intake being controlled by shutters in the servicing duct inside each individual house. Air-to-bed ratio is in keeping with modern thought on this particular aspect of growing and considerably in excess of the $4\frac{1}{2}$ to 1 which, until a year or two ago, was considered sufficient and still appertains on many farms.

Five crops a year are taken and the aveage production per crop is $1\frac{3}{4}$ lb. without stalks. Says Mr. Dales " I don't market stalks at all. I don't think the return is worth the trouble and stalks can depress the market anyway ".

A first-class farm this, every bit of it built by farm labour and completed in its present state just over a year ago. Mr. Dales himself estimates the cost per sq. ft., to point of production as about 25/-.

TOP: A view of the splendid, well-lighted covered roadway, taken from the composting shed. The packing shed is immediately on the right and the soil mixing shed and boiler room are on the left, with the growing rooms running off on either side of the main road. Note the stillage trucks, with wooden chests for easing material on the left.

BOTTOM: The tractor at work in the composting shed. Note the roof trusses.

Inside one of the growing houses, showing the pickers at work, and plenty of mushrooms.

often including the cost of transport as well.

Six men and five women are employed regularly on the mushroom farm with, as Mr. Dales said, "A few part-time women pickers extra on the rare occasions we have a first rate crop".

For the record Mr. Dales has growing-on houses, he thinks pubpicity does a lot of good and spots his main problem as the disposal of the used compost which he has to give away, quite

WRA

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DOES SEPARATED MYCELIUM GROW TOGETHER AGAIN, AND WHAT IS ITS YIELD?*

by **Dr. GERLIND EGER of the Max Planck Horticultural Institute, Hamburg.**

Recently new spawning methods have been developed, among them " Active mycelium spawning " (a), " Shake-up spawning " (b) and "super-spawning" (c). In these methods large quantities of mycelium are grown in freshly prepared compost, then broken up into fine pieces and used for heavy spawning of a further lot of compost.

Does this mycelium grow together again and what is the effect of this mutilation of the spawn on the picking date and the yield?

Rasmussen (Denmark) claimed at the 4th International Mushroom Congress in Copenhagen that separated mycelium grew together again very quickly. Shortly before casing-time he took some compost thick with mycelium, and tore it apart and squeezed it together again very carefully, so that the mycelium could no longer be seen with the naked eye. On the same day, he put the compost back and cased it. The first flush appeared at the same time as that on untreated beds. In the first month of picking the yield from the broken-up mycelium was 60 p.c. higher, but the total yield over 90 days was the same as that from the untreated beds.

As we were not certain that this experiment would give the same results in all cases, we examined the effect of separation on the yield of four strains, all differing from each other in their rate of growth.

Material.

Strain 71 was isolated from the spores of a white fruit-body of **Hullen** (Erlangen).

Strain 310 from the spores of Strain 33 of **Pommer** (" cream ")
Strain Hu is the original grain-spawn " pale " of **Hullen** (Erlangen)
Strain F-1 is a manure-spawn from Hungary (fruit-body " brown ")

For the first experiments, original spawn or our own grain-spawn was used (marked in Table with 'a'). For the other experiments one fruit-body was taken from each strain, a piece of tissue cut from it and a new grain spawn grown on agar. ('n' in table).

The relative rate of growth of the four strains on three substrates was determined : malt-agar, sterilized horse-manure and unsterilised mushroom-compost. Strain 71 grew fastest on all substrates, followed by F-1, Hu and 310. On malt-agar, the differences in rate of growth between 71, F-1 and Hu were very great, but were smaller on sterile horse-manure and smaller still on unsterilised compost. Strain 310, particularly 310n, grew much more slowly than all the others on the last-named substrate. All the experiments were repeated and the differences checked.

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Methods

Composted horse-manure was broken up, mixed well, and quantities of 400 g. placed as equally as possible in 1-litre preserving jars. The manure was then pasteurized, and finally inoculated. The jars were then kept in a culture room at 24 degrees C. (75 degrees F.) until the compost in all the jars was thick with mycelium. Then 10 or 25 jars of each strain were covered with casing-soil as a control, and the contents of a further 10 or 25 jars were treated on the same day in the following manner : the compost was taken out of the jars, and broken up very finely, so that the pieces of straw were separated as much as possible, and thoroughly forked. After this nothing could be seen of the mycelium. The compost was then put back into the jars and covered with casing-soil. All the jars were kept in a culture room at 24 degrees C. to start with, but the temperature was gradually lowered to 15 degrees C. (60 F.), as is usual in growing. The appearance of the first pinheads and the picking of the first mushrooms in each jar were noted. All mushrooms were picked at the same stage of development (just after the veil had been broken), and weighed. Only the yield of the first 40-50 days was considered, as during the weeks following only very few small fruit-bodies were formed. The mean yield per jar (400 g. of compost) of the (unseparated) control was 76-86 g. ; this corresponds to a yield of 7.6 to 8.6 Kg. per 40 Kg. of manure, which is the average yield in ordinary cultivation.

Results

Altogether 12 experiments were carried out. In all the jars with separated mycelium fruit-bodies were formed. The majority of the mushrooms weighed over 10 g. As the individual pieces of compost with the separated mycelia weighed only about 1 g. each, the separated mycelia must have grown together again.

In each experiment for all the jars the mean time in days to the appearance of the first pinheads was taken (see Table 1, column 5). The difference between the mean values in each experiment (mean for normal mycelium minus mean for separated mycelium)—see Table 1, column 7/x5—was in all cases very small. At the most the difference was 1 day. Only in 2 out of 12 cases is this difference significant (see Table 1, Column 8/Sx5). It can therefore be said that the start of formation of fruit-bodies is practically speaking not influenced by the separation of the mycelia.

Table 1 also shows that there was no significant delay of the start of picking from the jars with separated mycelia. Column 6 shows the mean start of picking in days after casing, and column 7/x6 shows the difference between the mean start of picking from normal and separated mycelium. Only in two cases are the differences significant (column 8/Sx6) : in experiment 5, the picking from separated mycelium began a mean of 1.7 days earlier, in experiment 7 on the other hand 2.6 days later than that from the normal mycelium. A comparison with the repeat experiments (6 and 8 & 9) allows us to draw the conclusion that these differences are due to other causes than the separation of the mycelium.

TABLE 1

Appearance of first pinheads and first picking from normal and separated mycelium

1 Experiment	2 Strain	3	4	5 First pinheads	6 First picking	7 x5	7 x6	8 Sx5	8 Sx6
1	71a	n	10	9.3	17.6	+0.3	+1.1	—	—
		z	10	9.0	16.5				
2	71a	n	10	11.0	20.2	0	—0.5	—	—
		z	9	11.0	20.7				
3	71a	n	10	9.1	20.4	—0.1	—0.3	—	—
		z	10	9.2	20.7				
4	71a	n	25	10.1	18.9	—0.9	—0.3	—	—
		z	25	11.0	19.2				
5	F-la	n	10	11.0	18.9	0	+1.7	—	+
		z	10	11.0	17.2				
6	F-ln	n	25	9.6	16.4	—1.1	—0.7	++	—
		z	25	10.7	17.7				
7	Hu a	n	10	9.1	17.4	—0.7	—2.6	—	+
		z	10	9.8	20.0				
8	Hu a	n	10	9.6	18.7	—0.2	—0.6	—	—
		z	10	9.8	19.3				
9	Hu n	n	25	10.9	18.0	—1.1	—0.7	++	—
		z	25	12.0	18.7				
10	310a	n	10	8.0	14.6	—0.2	—0.9	—	—
		z	10	7.2	15.5				
11	310a	n	10	7.4	17.1	0	—1.7	—	—
		z	10	7.4	18.8				
12	310n	n	25	10.8	17.8	—1.1	—1.0	—	—
		z	25	11.9	18.8				

Explanations : Column 3 : n=normal mycelium.
z=separated mycelium.

Column 4 : number of jars.

Column 5 : number of days (mean) from casing until appearance of first pinheads.

Column 6 : number of days (mean) from casing until first picking.

Column 7 : x5=n-value minus z-value in Column 5.
x6=n-value minus z-value in Column 6.

Column 8 : S=significance '—' not significant
'+' significant (P=5%)
'++' highly significant (P=1%)

TABLE 2

The effect on yield of separating young mycelium

1 Experiment	2 Strain	3	4	5
1	71a	n 10 z 10	103.1	—
2	71a	n 10 z 9	122.2	++
3	71a	n 10 z 10	100.1	—
4	71 n	n 25 z 25	91.6	—
5	F-1a	n 10 z 10	96.9	—
6	F-1n	n 25 z 25	117.2	++
7	Hu a	n 10 z 10	90.8	—
8	Hu a	n 10 z 10	108.7	—
9	Hu n	n 25 z 25	105.8	—
10	310a	n 10 z 10	110.3	—
11	310a	n 10 z 10	101.9	—
12	310n	n 25 z 25	74.8	++

Explanations : Column 3 : number of jars in experiment n=with normal mycelium, z=with separated mycelium.
Column 4 : mean yield of separated mycelium as a percentage of the unseparated control (mean yield of n-jars in Column 3 is taken as 100).
Column 5 : Significance of this difference as a percentage: '—' not significant ;
'++' highly significant (P=1%).

Table 2 shows the effect of separation on the yield. In each experiment the mean yield for normal and separated mycelium was measured. The mean for normal mycelium was taken as 100. The mean for separated mycelium was expressed as a percentage of this ; see Table 2, column 4. Column 5 shows whether this percentage difference is significant.

Only in experiment 12 was there a clear cut reduction in yield. Strain 310n had been discovered during the growth experiments to be particularly slow in growing. There was a significant increase in yield only in experiments 2 and 6. Large increases in the yield from separated mycelium during the first weeks of picking, as reported by Rasmussen (b), only occurred in 2 of the 12 experiments.

The results of our experiments agree with those of Rasmussen insofar as we found that separated mycelium grows together again quickly, and that fruiting is not delayed. The results only hold good for relatively young mycelium, such as we used in these experiments. It still remains to be tested how old mycelium reacts to being separated.

An increase in yield from separated mycelium during the first weeks of picking was not found to be the rule in our experiments. Separation has no effect on the yield from normally growing mycelium, but the yield from specially slow-growing mycelium may be reduced.

As far as practical cultivation is concerned, our results show that the separation of mycelium in "active mycelium spawning" and "shake-up spawning" cannot have a deleterious effect on yield or on the start of picking, although the mycelium in our experiments was purposely separated much more finely than it ever would be in actual practice. Moreover, no new substrate was added to the separated mycelium. Therefore in practice even more favourable results might be achieved.

References :

(a) **Huhnke,** W., and R.v.Sengbusch : "Aktiv-Mycel-Spickung von Champignonkulturen". Die Deutsche Gartenbauwirtshaft. 7/12, 1959.

(b) **Rasmussen,** C. R. : "Shake-up Spawning". 4th International Congress in Copenhagen, 1959.

(c) **Rasmussen,** C. R. : "Now : Super-Spawning". MGA Bulletin, 122/2, 1960.

NEW BOOKS

"*Studies on the Influence of Carbon Dioxide on the Cultivated Mushroom*" by Dr. H. J. Tschierpe, which was serialsed in the *MGA Bulletin* some while ago is now available in book form, price 10/6d. from MGA headquarters. Only a limited number of bound copies of this extremely valuable work are available and early application is advisable.

Copies are still available of the booklet "*Mushroom Pathogens, Weed Moulds, Indicator Moulds and Competitors*" by Dr. L. R. Kneebone and E. Merek (U.S.A.) at 5/- each. The print order for this work was also strictly limited and a reprint is most unlikely.

A completely revised edition of "*Mushroom Growing Today*" by F. C. Atkins has just been issued. This book, which has already sold over ten thousand copies, is available from the MGA Office at 25/- plus 1/6d. postage.

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Some of the members who attended the Area "C" meeting. Inset (top right): Mr. N. R. Cooper answering questions.

Pictures by F. C. Atkins

THIS AND THAT IN AREA C

Farm Walk in Warwickshire

Area C held a particularly interesting Farm Walk and Discussion at Shadowlawn, Kimcote, Rugby, on Thursday, 29th June, at the kind invitation of the Area's hon. secretary, Mr. Norman Cooper, and Mrs. Cooper, who later served a more-than-ample tea on her pleasant lawn in glorious sunshine.

We were fortunate in other ways. Dr. R. L. Edwards, who with Mr. Cooper is on the MGA Executive, and Mr. Peter Danks, a member of the MGA Publicity Sub-Committee, are Area members who attended. Mr. John Berry, vice-chairman of the MGA Executive, Miss Rachel Owen, our PRO, and Dr. I. F. Storey, the NAAS regional plant pathologist, were also kind enough to make the journey.

This is not the place and moment to describe in detail Mr. Cooper's well planned and efficiently run farm, but we all enjoyed the conducted tour and seeing, despite the phenomenal weather, mushrooms on his trays and learning the way in which he grows successfully with what must be the absolute minimum of labour and phorid flies!

Flies were the principal current problem among the 20 or so growers present, and I was able to confirm that it was not peculiar to the Midlands in the summer of 1961. Control measures, the value or otherwise of compost analyses for total nitrogen, the disadvantages of horse droppings without straw, and Mr. Rasmussen's successes were among the phenomena discussed before tea.

After the tea interval Miss Owen introduced Monty Mushroom and emphasised the need for much larger sums of money if publicity were to make a really substantial impact and counter-balance the widespread expansion of cropping area. A suggestion that 1d./lb. would raise something like £166,000 p.a. received considerable support; frankly I was astonished, and wonder still whether the implications were appreciated. As Mr. Berry pointed out, on the assumption that a carton of spawn might grow about 45 lb. of mushrooms, it was equivalent to a levy of 3/9d. per carton of spawn compared with the present 3d.

Dr. Edwards was invited to explain the background to a new technique comparable with hydroponics which was being developed in France and, asked for his personal opinion, said he felt it should not be ignored.

Mr. Danks was persuaded to put forward his advanced ideas on a contract marketing scheme for direct sales. Direct selling to consumers by any one grower has in general to be restricted to 20 25% of his average production and, suggested Mr. Danks, a collective marketing scheme might help to improve this figure and lead to a stabilization of higher prices for the grower without an increase to the consumer.

Mr. Joe Longhill, who is both grower and wholesaler, held other views, and I felt I was right in calling on him to put the other side of the argument. Unfortunately there was no time for a full debate.

The idea of two meetings a year was unanimously preferred to one, and the Area Committee was asked to arrange another in September. Once again the question of an Area Advisory Service was postponed.

FCA

MUSHROOMS AND CANCER

A writer in "*Chemical Age*", London, again draws attention to the possibility that a substance in mushrooms may provide the key to the control of cancer in humans. He writes:

Cigarettes and mushrooms will be my diet after learning from a correspondent that Japanese research workers have discovered a substance in mushrooms which can combat the growth of cancerous cells. The substance was extracted from ground mushrooms by using acetone and methyl alcohol. The Japanese investigators also found that most of the 700 species of mushrooms examined contained this substance and believe that mushrooms eaten at meals should help to check cancerous growth in humans.

During tests, the substance was injected into 591 mice affected with cancer. Of them, 84 reportedly recovered, while the disease was checked in another 146 mice.

The discovery was the result of three years' joint research conducted by scientists of the Epidemic Disease Research Institute of Tokyo University, the Biology Department of Tokyo Medical and Dental University, and the Tokyo Metropolitan Hygiene Institute. They are now trying to extract this substance in crystal form to determine its chemical composition. After this is done, tests will be made on humans.

ACCELERATED FREEZE DRYING

by J. R. Bartlett

Throughout history, man has been attempting to find ways of increasing the shelf life of fresh foods. All fresh foods deteriorate relatively rapidly. This deterioration is caused very largely by bacteria. Bacteria cannot grow without moisture and oxygen.

The methods that man has adopted so far are drying, canning or bottling, quick freezing, smoking, salting, and use of chemical preservatives. More recently dehydration has been speeded up so that by blasting air over the food, the moisture is extracted quickly. Products of this nature are being marketed at present.

A.F.D. is a method of processing food whereby the moisture is extracted without altering the *size or shape* of the product concerned. In this way the bacteria growth is brought to a halt. If packaged to keep out moisture vapour, air and light, it will last almost indefinitely without any special conditions of storage – *no refrigeration*. When the food is needed it is taken out of the pack and immersed in water for about five minutes, and the food has its texture, flexibility, colour, appearance and flavour just as fresh. Other methods of extending shelf life appear to have failed to do this. In addition, A.F.D. food is immensely light, which will cut transport costs. Food stored for years can in five minutes become "1 hour fresh".

The basic method of freeze drying has been known for many years. It is based on the principle that as the atmospheric pressure decreases, the boiling point gets nearer freezing point. Those of you who have motored in the mountains will know the risk of radiators boiling. The idea is to extract the water out of the food without removing colour pigment, taste or altering the cell structure. This can only be done if the ice is turned into vapour, *without becoming liquid*. If the pressure is low enough, i.e., if the food is in a vacuum chamber, it will become frozen, and providing the vacuum is low enough, the ice particles formed will turn into moisture vapour, passing through the cell structure of the food without damaging it in any way.

All foods can be processed by this method. Meat, Fish, Eggs, Vegetables, Fruit, Juices, Coffee and even Mushrooms.

If sufficient members are interested the MGA will organise a party to visit the Vickers Armstrong factory at Swindon, where the process described above, is being perfected. The initial outlay is very high but action may be possible, at a later date, on a co-operative basis. Members interested should write to the MGA Secretary.

HERE AND THERE

Looking Ahead

The French Government is taking widespread measures to streamline marketing of fruit and vegetable surpluses under the Common Market conditions. The proposals include the setting up of 26 markets internally and the taking of strong measures to build up exports.

Commercial Grower, 14.7.61.

Protection

As from 14th July, components of any stationary machines should be guarded in such a way as to protect workers from contact with them. This became an obligation under the Agriculture (Stationary Machinery) Act.

The Grower, 15.7.61.

More Pay

Britain's 560.000 agricultural and horticultural workers are asking for more pay and less work. Seven months ago workers had their pay increased and hours were changed in February of this year. Now a claim for higher basic pay (now £8 9s. 0d. a week) and reduced hours (now 46 per week) is to be put forward.

Stolen

A hand-cart loaded with 63 baskets of mushrooms was stolen from the platform of Kew Bridge Station.

London Evening News, 29.6.61.

Goldmine

. . . And here is a new idea from Denmark concerning that great delicacy —the mushroom. Pig manure compost has been discovered as more suitable than horse manure —which is now almost unobtainable . . . Mr. C. Riber Rasmussen, a research worker, found that this method (through-spawning with plastic covered trays) produced phenomenal results: he picked nine pounds of sound, fresh mushrooms to each square foot of space. His total yield was 936 lb. of mushrooms from each ton of pig manure. Photographs sent to me confirm this, so I'm hoping our own garden adventurers will get busy on a possible gold-mine.

T.A.L. in *Tit Bits*, 24.6.61.

1961 CONFERENCE AND EXHIBITION DETAILS

Preliminary Programme

Arrangements are now going ahead with the preliminary programme for the October Conference and Exhibition to be held at Great Yarmouth, the East Anglian seaside resort.

It cannot be over emphasised that the programme, published herewith, is subject to alteration but, broadly speaking, no important change is contemplated.

Because of the limitations of the Assembly Hall, in which the exhibition takes place, this year's exhibition will be somewhat novel in that the usual type of stands will be replaced by roped and post enclosures. It is anticipated that, with the use of flowers and shrubs, etc., the whole will present an attractive appearance.

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Until the matter of stand allocations has been completed the site of the actual mushroom competitions and for the lectures is uncertain but they will be held either in the Assembly Hall or at the Carlton Hotel, headquarters of the MGA. Members are again reminded that accommodation at this hotel is limited and early application is advisable.

The lecturers include Dr. James W. Sinden of Switzerland, Fraulein Eger of the Max-Planck Institute in West Germany, who will give a paper on "The 'Halbschakentest'—a Simple Method for the Investigation of Casing Materials". Mr. C. R. Rasmussen from Denmark will talk about "Air in the Growing Room" and many will hope he will have a word or two to say about some remarkable yields he has obtained in Denmark.

The importance of insulation cannot be too strongly emphasised and a paper on this subject, by a representative of Fibreglass, is bound to arouse much interest.

As in previous years a "Get Together" will be held at the headquarters hotel but prior to this Messrs. Bradfield Bros. of Martham, near Yarmouth, have invited members to visit their farm and have also promised to provide facilities for a machinery demonstration. The Mayor of Yarmouth's Reception, with dancing, and an outing for the ladies are also included.

Further details will be announced next month but the preliminary programme is:—

PROGRAMME

Monday, 16th October:

2 p.m.—5 p.m.	Broadlands Mushroom Farm—Martham. Open to visitors. Machinery Demonstration.
8.30 p.m.	"Get Together"—Carlton Hotel.

Tuesday, 17th October:

10 a.m.—5 p.m.	Mushroom Industry Exhibition.
1.30 p.m.	Golf Competition.
3.30 p.m.	Mushroom Competition.
5 p.m.	Lecture—Dr. James W. Sinden.
8.30 p.m.	Reception and Dance. Presentation of Cups etc.

Wednesday, 18th October:

10 a.m.—3.30 p.m.	Mushroom Industry Exhibition.
10 a.m.	Ladies' Excursion.
11.30 a.m.	Lecture—Fibreglass Ltd.
3.30 p.m.	*Lecture:* FRAULEIN EGER.
5 p.m.	Trade Exhibitors Meeting.
8 p.m.—9.30 p.m.	*Lecture:* C. R. RASMUSSEN.

Thursday, 19th October:

Departures.

WHAT'S GOING ON IN PUBLICITY?

Our recent press hand-outs have carried recipes for mushrooms with curry, with spaghetti, with pigeons and with salads. We have talked about drying mushrooms and pickling them and we are hoping soon to publicise the mushroom in a "Better Breakfast" campaign, for few if any people doubt that more mushrooms are eaten at breakfast time than at any other time throughout the day, despite their increasing rise in popularity with caterers in general, resulting in more and more mushrooms being consumed at lunch and with dinner.

On Television

Twice in recent months mushrooms have had a special feature to themselves, on both B.B.C. television and I.T.V. (Southern).

The B.B.C. programme featured Mr. J. G. Batchelor's farm at Churt in Surrey and was included in a "Town and Around" programme. Some extremely valuable mushroom publicity was obtained and Mr. Batchelor deserves thanks and congratulations.

On Southern Television the film of A. G. Linfield's farm at Thakeham, Sussex, first shown late last year, was again featured in the "Farm in the South" programme and this time, by way of contrast, Mr. John Scrimgeour's somewhat smaller farm at Lytchett Matravers, Dorset, was also included. In addition, Mr. Peter Linfield and the MGA Secretary were seen and heard in another discussion on the mushroom industry in general. This programme lasted nearly 25 minutes.

There was too, that "Sacred Mushroom" programme on B.B.C. television, prior to which we were assured that the mushrooms concerned were only obtainable in two or three parts of the world, and this would be made quite clear in the programme.

Sound Radio

Louise Davies is known to millions of women for her "Shopping List" programme and this is what she had to say recently on B.B.C. sound radio.

"Now, how to get the best value for money from cultivated mushrooms. There are three main sizes and shapes: pale, tiny ones called buttons, the larger cups, and those appropriately called opens or flats. What you may not know is that they're not different varieties, but the same mushrooms picked at different stages of development.

Buttons are the youngest and tenderest, best for garnishes, sauces, sliced raw in salads, and for other delicately flavoured cooking.

If you're buying cups that have begun to open, here's a sure sign; the pinker the gills the younger and fresher the mushroom.

Cooking with the mature flats or opens, the dark brown juice is apt to stain the rest of the ingredients, but flats definitely have the most flavour, delicious for mushrooms on toast. Obviously the mature flat mushrooms won't keep as long as the young buttons, so avoid any already too old, that is with the gills almost black-brown and inclined to be damp or slimy, or with the skins already leathery and wrinkled. Usually the buttons are the dearest.

Members of the Oxford Townswomens' Guild recently visited the farm of Aylesbury Mushrooms Ltd. Mr. J. Stewart-Wood explains a point to interested onlookers.

For something really cheap for soups or strong flavoured sauces look for mushroom stalks.

You may not have a choice of all these, as most shops stock only the one, or maybe two, for which they have most demand.

Peeling is not necessary for cultivated mushrooms: just wipe them and wash them. If you find they're not up to standard, complain, and your retailer can pass your complaint back to the wholesaler or grower. And if you aren't using them immediately, unwrap the ripe mushrooms and keep them as cool as possible".

Perhaps we were not quite so happy with the reference to mushroom compost in the "Emergency Ward 10" programme but this is one of the hazards of the game.

The Press

Frequent mentions of mushrooms and mushroom recipes continue to appear in the Press, from the "Financial Times" to "Larousse Gastronomique", with special photographs, and photographs too have appeared in the "Oxford Mail", "Oxford Times", "Caterers' Association Bulletin", "Belfast Newsletter", Butter Information Council's July pamphlet and "Modern Knitting". Mushrooms themselves have been supplied for special photographs illustrating an article by Philip Harben in "Woman's Own", for Audrey Ellis "Modern Woman", Mary Meredith "Woman's Weekly" and for the use of Cannon Cookers at the Ideal Home Exhibition, and Harris's at the June Dairy Festival at Southsea.

Demonstrations

Mrs. Valerie March, the MGA's Cookery Adviser, in addition to supplying a regular service of new recipes has also carried out several

The MGA is co-operating with the NFU Produce Show Society in publicising fresh home-grown vegetables for use in salads and this is a picture which is now appearing in scores of underground trains in London. Mushrooms receive a prominent display. The poster is in full colour.

cookery demonstrations in various centres and, at the same time, has given a general talk on mushrooms. Among a number of places where demonstrations have been given, both by Mrs. March and by Gas Boards, are: Oxford, St. Albans, Colchester (twice), Penge, Forest Hill, Reigate, Bexleyheath, Dartford, Orpington, Dorking, Horley, South Norwood and Bromley. The successful demonstration at Rugby has already been reported. In each case the mushrooms, supplied by MGA members, have been particularly appreciated by the demonstrators and, for that matter, by the cookery journalists and by the photographers. All have enjoyed using fresh, good quality mushrooms, and whenever the public has been directly concerned, the quality, freshness and the whiteness has been favourably commented on. We are most grateful to members for their co-operation and for the important contribution they are making towards creating good public relations, and towards educating the public in the appreciation of mushrooms.

Shows-Exhibitions

This year we abandoned the idea of taking stands at shows and exhibitions, mainly because of the cost and the difficulty in organisation and staffing for a small concern such as ours; but we have supported various people who have given demonstrations at such places, by supplying mushrooms and thus sponsoring their inclusion. This has been a very effective way of carrying mushrooms into a large number of widely scattered towns at very low cost. The Farm Fare demonstrations

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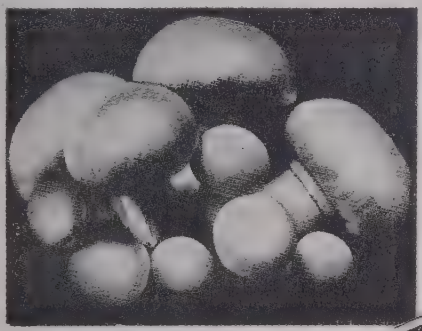

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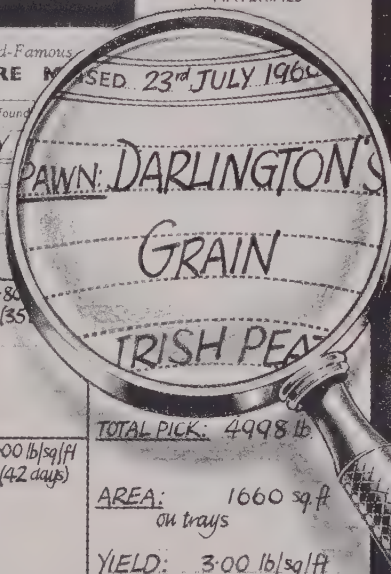
HOUSE NO. 5 DATE SPAWNED 13th JULY

	lb.		DAY	lb.	
1	31		32	–	
2	50		33	–	
3	–		34	246	
4	–		35	38	
5	757		36	–	2·8[illegible]
6	149		37	43	(35
7	388		38	–	
8	–	·83 lb/sq/ft	39	–	
9	224	(7 days)	40	–	
10	–		41	150	
11	–		42	144	
12	–				3·00 lb/sq/ft
13	1158				(42 days)
14	493				
15	–	1·95 lb/sq/ft			
16	281	(14 days)			
17	–				
18	–				
19	122				
20	36				
21	81				
22	144	2·27 lb/sq/ft			
23	45	(21 days)			
24	–				
25	–				
26	–				
27	249				
28	–				
29	–	2·53 lb/sq/ft			
30	169	(28 days)			
31	–				



TOTAL PICK: 4998 lb

AREA: 1660 sq ft
on trays

YIELD: 3·00 lb/sq/ft

organised by the Potato Marketing Board illustrate this point for they were at Nantwich (attendance 800), Lancaster (800), Mexborough (750), Shrewsbury (400), Driffield (1,500), Accrington (1,600), Manchester (750) and West Hartlepool (1,000). It was no accident that Doreen Davies, the well-known cookery expert, featured mushrooms at the Homes and Gardens Exhibition Birmingham and at an exhibition in Northampton.

Cookery Play

The cookery play "Fare & Warm" has been seen at Sunderland, Tynemouth, Darlington, South Shields, Redcar, Middlesbrough, Whitley Bay, Stockton, Coventry, Sutton Coldfield, Worcester, Stourbridge, Walsall and Hanley. It starts another comprehensive tour in the autumn.

Miss Rachel Owen, the MGA's P.R.O.
Picture by F. C. Atkins

Disappointment

By the means already outlined we have carried mushrooms into many parts of the country and we feel that these efforts have been very well worthwhile.

Quite a big (for us) attack on nation-wide publicity was intended when we produced and circulated to greengrocers throughout the country, copies of our new Monty Mushroom poster. But on this occasion our efforts fell somewhat short of the success for which we had hoped. The retailers did not appear sufficiently interested in our poster or in pushing mushroom sales, and we were unable to give them any great encouragement. To employ people to distribute and put up posters is an undertaking which is only within the scope of a large organisation with a suitable publicity budget. It may well be that we can achieve a great deal more with help, in this particular sphere of publicity work, by the greater use of the chip basket and through members as a whole, and this avenue is to be explored soon.

Success

All the three thousand Wall Charts, designed especially for use in the schoolroom, have now been distributed, more than 95% as a result of direct applications from individual teachers.

Free

A limited amount of display publicity material and the cheaper recipes ("Month by Month") are available to Grower Members free of charge. This has been decided by the Publicity Committee and the display material includes Monty posters and strip "M-M-M-Mushrooms"

posters, both large and small.

Chip Covers

Sales of publicity chip covers are beginning to pick up and these are available from Reed Corrugated Cases Ltd., Great West Road, Brentford, Middx., or from any branches, the addresses of which appeared in *Bulletin* No. 127 (June, 1960), p. 272. These attractive covers, measuring 12″ × 7¼″ are obtainable for as little as 49/- per 1,000 and for orders of this size the names of both members and consignees can be printed without additional charge and with an extra colour if required.

Paper Bags

A new paper bag design has just been issued. RO

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"They say that this is the way they wear them in France and we shall all have to do the same if we get in the Common Market!"

This X-o-matic machine for the sale of mushrooms, outside a farm in Sussex, is proving very popular.

Picture by courtesy of "*The Grower*".

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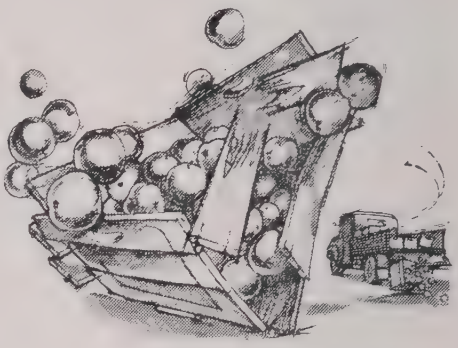

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